



# Distribution of the Neotropical water snakes *Hydrops caesurus*, *H. martii*, and *H. triangularis* in South America, with new records from Peru and Brazil

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Neotropical water snakes in the genus *Hydrops* Wagler, 1830 (Serpentes, Colubridae, Dipsadinae, Hydropsini) are distributed across the northern two-thirds of South America and have been recorded in 12 countries: Colombia, Venezuela, Trinidad and Tobago, Guyana, Suriname, French Guiana, Ecuador, Peru, Brazil, Bolivia, Paraguay, and Argentina (Albuquerque 2000; Scrocchi et al. 2005; Albuquerque and De Lema 2008). Three species are currently recognized: *Hydrops caesurus* Scrocchi, Ferreira, Giraud, Ávila and Motte, 2005, *Hydrops martii* (Wagler 1824), and *Hydrops triangularis* (Wagler 1824). The most recent geographical distribution maps for these species have been provided by Scrocchi et al. 2005 (*H. caesurus*), Entiauspe-Neto et al. 2017 (*H. martii*), and Albuquerque and De Lema 2008 (*H. triangularis*). Here, we present an updated map and a list of individual geo-referenced records for these species. Our database also includes new records of *H. triangularis* from southern Peru (extending the known geographic distribution of this species) and northern Brazil, and a new record of *H. caesurus* from Brazil.

We reviewed the literature, museum specimens, and several publicly available biodiversity databases to compile a list of geo-referenced locality records for the three species of *Hydrops* (Appendix I). In cases where a specimen could not be physically inspected, we communicated with researchers who confirmed the identity

and location of a particular record and/or the curators in charge of specific herpetological collections. Additionally, all coauthors carried out a critical review of the literature, paying special attention to publications from the country or region where they conduct their research. Most records were supported by voucher specimens listed in VertNet (<http://vertnet.org>) and/or deposited in one of the following natural history museum collections: Coleção Herpetológica Alphonse Richard Hoge, Instituto Butantan (IBSP), Coleção Herpetológica das Faculdades Integradas do Tapajós (LPHA), Coleção Zoológica de Vertebrados da Universidade Federal de Mato Grosso (UFMT), Instituto Nacional de Pesquisas da Amazônia (INPA), Museo de Historia Natural de la Universidad Nacional Mayor de San Marcos (MUSM), Museo de Historia Natural de la Universidad Nacional de San Agustín (MUSA), Museu de Ciências e Tecnologia, Pontifícia Universidade Católica do Rio Grande do Sul (MCTPUCRS), Museu de História Natural Capão da Imbuia (MHNCI), Museu de Zoologia da Universidade de São Paulo (MZUSP), Museu Nacional, Universidade Federal do Rio de Janeiro (MNRJ), Museu Paraense Emílio Goeldi (MPEG), Universidade Federal do Acre (UFAC), and University of Michigan Museum of Zoology (UMMZ). The dataset also includes 12 geo-referenced records available in GBIF (<https://www.gbif.org>) that we were able to verify; all other records from GBIF

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were not included in our analysis either because accurate voucher specimen data were not available or they lacked geo-referenced data.

The database contains 337 geo-referenced records, most of which were supported by voucher specimens deposited in a museum collection (Appendix I). We also included one observation from southern Peru lacking a voucher specimen, but in this case a high-resolution photograph was available. Altogether, the dataset includes 17 records of *H. caesurus*, 98 of *H. martii*, and 222 of *H. triangularis*.

We used the R package *maptools* (Bivand and Lewin-Koh 2014) to produce a map depicting the distribution of the three species of *Hydrops* in South America. We also consulted a layer depicting the Global Biomes according to the World Wildlife Fund (WWF) classification, obtained from the Terrestrial Ecoregions of the World dataset (WWF 2008), to determine the primary ecoregions used by each species.

We report four individual records of *H. triangularis* from Madre de Dios region, Peru. The first two individuals were found at Pampas del Heath National Sanctuary on 10 November 2015. This site is located at the transition between lowland rainforest and tropical savanna grasslands. Both individuals were collected in a flooded area, at a site dominated by seasonally-flooded grassland (12°56'42.25"S, 68°55'4.62"W; 212 m elev.) and that had limited canopy cover. Both specimens were deposited at the Herpetological Collection at the Museo de Historia Natural de la Universidad Nacional de San Agustín (MUSA), Arequipa, Peru. One was an adult female (MUSA-4749, Fig. 1) with a total length of 774 mm, and the other an adult male (MUSA-4750) with a total length of 565 mm (male *H. triangularis* are sexually mature at body sizes  $\geq 415$  mm; Scartozzoni 2009). The third individual of *H. triangularis* was found at Los Amigos Biological Station on 26 July 2016. This site is primarily covered by continuous, undisturbed lowland rainforest and includes several aquatic and terrestrial habitats typical to western Amazonia (von May et al. 2009). The snake was encountered on a humid night following heavy afternoon rainfall. This individual (Fig. 2) was moving on the ground in a mature floodplain forest, and had an estimated total length of ~700 mm. A GPS point (12°34'07"S, 70°05'57"W, 250 m elev.) and photographs were taken (photographic voucher PERU2016\_5732), but the specimen was not collected. A fourth individual of *H. triangularis* was found at Los Amigos Biological Station on 23 November 2017. This individual was captured in a funnel trap placed in a wetland area in a swamp dominated by *Mauritia flexuosa* trees. This habitat is locally known as *Aguajal* and is one of the main forest types at the site. This individual had a total length of 313 mm and was deposited in the herpetological collection at the Museo de Historia Natural Universidad Nacional Mayor de San Marcos (MUSM), Lima, Peru (MUSM-H 38992; field number RAB2664). These four specimens

represent the first records of the genus *Hydrops* in Madre de Dios region.

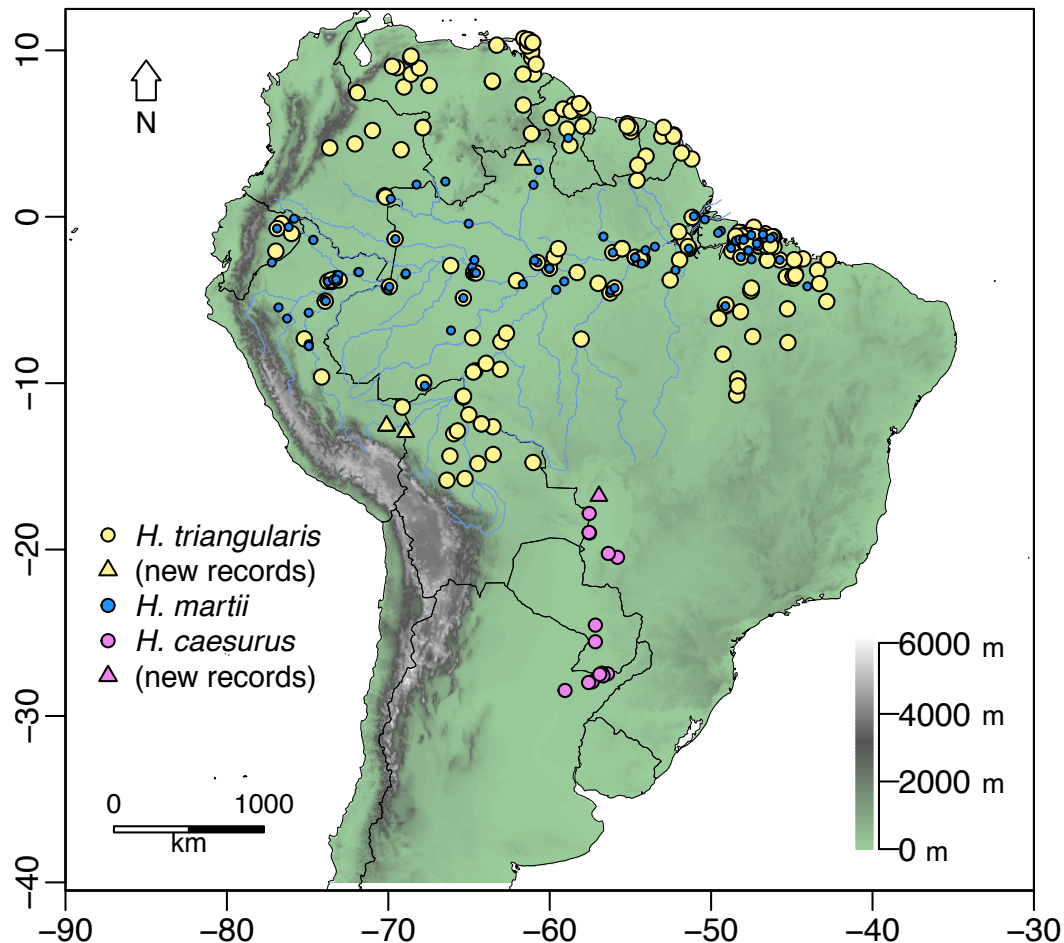
The four specimens reported here represent an extension of the known geographic range of *H. triangularis*; this species was not included in the most up-to-date reptile species lists available for Madre de Dios (Catenazzi et al. 2013; Whitworth et al. 2016). The closest known record of *H. triangularis* was based on a specimen collected at Cachoeira Chapacura, Bolivia, and deposited in the Coleção Herpetológica Alphonse Richard Hoge at Instituto Butantan (IBSP 41351), which was lost when the institute's collection was destroyed by fire (T. Guedes, pers. comm.). Specifically, the records from Los Amigos Biological Station extend the known geographic range 163 km to the southwest, and the records from Pampas del Heath National Sanctuary extend the known geographic range 167 km to the south. It is worth noting that these records of *H. triangularis* were obtained in a region that has been the focus of numerous herpetological inventories spanning several decades (Rodríguez and Cadle 1990; Morales and McDiarmid 1996; Duellman 2005; von May and Donnelly 2009; von May et al. 2006; von May et al. 2009, 2010; Catenazzi et al. 2013). This finding demonstrates the need for further field research even at sites that have been the focus of multi-year surveys (e.g., Los Amigos Biological Station).



**Fig. 1.** *Hydrops triangularis* (MUSA 4749) collected at Pampas del Heath National Sanctuary, Madre de Dios region, Peru. Photo by Roy Santa Cruz.



**Fig. 2.** *Hydrops triangularis* (photographic voucher Nbr. PERU2016\_5732) recorded at Los Amigos Biological Station, Madre de Dios, Peru. Photo by Emanuele Biggi.



**Fig. 3.** Distribution of *Hydrops triangularis*, *Hydrops martii*, and *Hydrops caesurus* in South America. Triangles indicate new records.

Our database also includes new geo-referenced data from specimens of *H. caesurus* (UFMT-R 8684) in the State of Mato Grosso, Brazil, and the first record of *H. triangularis* (MPEG 16697) in the State of Roraima, Brazil. We also note that one record of *H. triangularis* from Guyana was based on a voucher specimen deposited in the Muséum National d'Histoire Naturelle (MNHN), Paris, France (MNHN 1996.4586). This specimen was subsequently identified as *H. caesurus* because it matched the diagnostic features for this species (Albuquerque and De Lema 2008). However, given that it was collected far from the previously known geographic range of *H. caesurus* (Scrocchi et al. 2005), further studies including genetic data are needed to assess the status of this population.

The updated map (Fig. 3) shows that *H. martii* and *H. triangularis* have largely overlapping geographic distributions, and are often found in syntopy - a pattern suggested by previous research (Albuquerque and Camargo 2004) - especially along the central portion of the Amazon basin, from multiple sites around the Iquitos region to sites located east and south of Belém, Brazil. In contrast, *H. caesurus* has a separate geographic distribution outside of the Amazon basin. Furthermore, the distribution of *Hydrops* in South America is strongly linked

to several major biomes. The distribution of *H. martii* is restricted to tropical and subtropical moist broadleaf forest. We also note that *H. martii* does not occur at sites located west of the Andes in Ecuador and northern Peru, nor in southeastern Peru, as was claimed previously (Albuquerque 2000). The distribution of *H. triangularis* is primarily associated with tropical and subtropical moist broadleaf forest, though it also occurs in tropical and subtropical grasslands, savannas and shrublands (e.g., in Venezuela and Bolivia). The distribution of *H. caesurus* is strongly associated with flooded grasslands and savannas, tropical and subtropical grasslands, and savannas and shrublands (i.e., in Brazil, Paraguay, and Argentina).

Given that the geographic distribution of *H. caesurus* does not overlap with that of the other two species, it is likely that strong ecological and historical (e.g., river basins) barriers drive the distributions of these species. It is worth noting that one biome, tropical and subtropical dry broadleaf forest, is present between the northernmost localities of *H. caesurus* and the southernmost localities of *H. triangularis*, and that neither species has been recorded in this biome.

In addition to the genus *Hydrops*, two other genera of water snakes in the tribe Hydropsini - *Helicops* and *Pseudoeryx* - are distributed in South America. Recent



studies focusing of the reproductive mode of Neotropical water snakes have shown that all three species of *Hydrops*, in addition to *Pseudoeryx plicatilis* and two species *Helicops* (*H. gomesi* and *H. hagmanni*) are oviparous (Albuquerque and Camargo 2004; Braz et al. 2016). In contrast, most other species of *Helicops* are viviparous and only one (*H. angulatus*) exhibits both reproductive modes (Braz et al. 2016). Documented records of the reproductive mode of *H. angulatus* indicate that viviparity is more prevalent in western Amazonian populations (e.g., Madre de Dios region, Peru), while oviparity is prevalent in the eastern portion of the range of this species (Braz et al. 2016).

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### Appendix 1. Geo-referenced data for individual species records included in this study.

Species	Country	Locality	Latitude	Longitude	Catalog number	Identified by/ Recorded by	Reference
<i>Hydrops caesurus</i>	AR	Bella Vista, Provincia de Corrientes	-28.46667	-59.05	MLP-JW 150	Williams & Couturier, 1984	Williams & Couturier, 1984
<i>Hydrops caesurus</i>	AR	Puerto Carambola, San Miguel, Corrientes	-27.99	-57.59	UNNEC 7589		Scrocchi et al 2005
<i>Hydrops caesurus</i>	AR	Puerto Carambola, Departamento San Miguel, Provincia de Corrientes	-27.94500	-57.36200	UNNEC 7198	Scrocchi et al., 2004	Scrocchi et al., 2005
<i>Hydrops caesurus</i>	AR	Ituzaingó, Corrientes	-27.59	-56.69	--		Giudice et al. 2006
<i>Hydrops caesurus</i>	AR	Puerto Tala, Isla Apipé Grande, Provincia de Corrientes	-27.55000	-56.80000	UNNEC 11436	Etchepare et al., 2012	Etchepare et al., 2012
<i>Hydrops caesurus</i>	AR	Isla Apipé Grande, Corrientes	-27.50	-56.90	--		Zaracho et al., 2014
<i>Hydrops caesurus</i>	PA	Complejo Isla Yacyreta, Departamento Itapúa	-27.48278	-56.73583	MNHNP 4951	Scrocchi et al., 2005	Scrocchi et al., 2005
<i>Hydrops caesurus</i>	PA	Canal de los Jesuitas, Isla Paloma, Departamento Itapúa	-27.46670	-56.41670	MNHNP 06698	Scrocchi et al., 2005	Scrocchi et al., 2005
<i>Hydrops caesurus</i>	PA	Isla Yacyreta and surroundings, Departamento Itapúa	-27.43000	-56.77000	MNHNP 06697	Scrocchi et al., 2006	Scrocchi et al., 2005

<i>Hydrops caesurus</i>	PA	Paraguay River; 14 km S from Puerto Rosario, Departamento Presidente Hayes	-25.53944	-57.17083	MNHNP 06462	Scrocchi et al., 2007	Scrocchi et al., 2005
<i>Hydrops caesurus</i>	PA	Rio Paraguay ca. 14 km by river from Puerto Rosario	-24.53944	-57.17083	MNHNP 06462	P. Buongermini & T. Waller	Herp Review 1998
<i>Hydrops caesurus</i>	BR	Aquidauana Municipality, Mato Gross do Sul	-20.46667	-55.80000	IBSP 29171	Nelson R. de Albuquerque	Herp Review 2001
<i>Hydrops caesurus</i>	BR	Miranda, Mato Grosso do Sul	-20.23333	-56.36667	CEUCH 3061	Scrocchi et al., 2005	Scrocchi et al., 2005
<i>Hydrops caesurus</i>	BR	Ladário, Mato Grosso do Sul	-19.00500	-57.53348	CEUCH 27	Scrocchi et al., 2005	Scrocchi et al., 2005
<i>Hydrops caesurus</i>	BR	lagoa Negra, Ladário, Mato Grosso do Sul	-18.97083	-57.56250	CEUCH 208	Scrocchi et al., 2005	Scrocchi et al., 2005
<i>Hydrops caesurus</i>	BR	Fazenda Acurizal, Serra do Amolar, Mato Grosso do Sul	-17.83083	-57.55167	UFMT-R 1188	Scrocchi et al., 2005	Scrocchi et al., 2005
<i>Hydrops caesurus</i>	BR	Poconé, Mato Grosso	-16.7845	-56.9485	UFMT-R 8684	R.A. Kawashita-Ribeiro	This study
<i>Hydrops martii</i>	BR	Senador Guimard, Acre	-10.151	-67.736	UFAC 294	Henrique Braz	This study
<i>Hydrops martii</i>	PE	Roaboya (Río Ucayali), Ucayali	-7.78330	-74.91660			Roze (1957)
<i>Hydrops martii</i>	PE	Roaboya, Río Ucayali, Loreto	-7.760556	-74.9275	AMNH 53086		Roze, 1957b
<i>Hydrops martii</i>	PE	Cashiboya, Río Ucayali, Loreto	-7.658321	-74.928645	AMNH 53130		Roze, 1957b
<i>Hydrops martii</i>	BR	(Río Purus), Amazonas	-6.83330	-66.11660			Albuquerque (2000)
<i>Hydrops martii</i>	PE	Pampa Hermosa (Río Cushabatay) , Loreto	-6.11660	-76.26660			Roze (1957)
<i>Hydrops martii</i>	PE	Pampa Hermosa, Río Cuchabatay, Loreto	-5.766667	-74.931389	AMNH 55429		Roze 1957b; Albuquerque 2000
<i>Hydrops martii</i>	PE	Challavitas, Alto Amazonas, Loreto	-5.45	-76.8	BMNH 1946		Roze, 1957b
<i>Hydrops martii</i>	BR	Fazenda São Gabriel, Marabá, PA	-5.36889	-49.11778	MPEG 24073	[no agent data]	na
<i>Hydrops martii</i>	PE	Monte Carmelo, Requena, Loreto, PE	-5.07000	-73.91000	AMNH 55492	Nelson R. de Albuquerque	Albuquerque 2000
<i>Hydrops martii</i>	PE	Requena, Uresti, Requena, Loreto	-5.068389	-73.861994	AMNH R55494		Roze 1957b; Albuquerque 2000
<i>Hydrops martii</i>	PE	Requena, Loreto	-4.98330	-73.96660			Roze (1957)
<i>Hydrops martii</i>	BR	Base Operacional Geólogo Pedro de Moura, Província Petrolífera de Urucu, Igarapé Tartaruga, Coari, Amazonas	-4.885369	-65.349997	MPEG 22225		Prudente et al., 2010
<i>Hydrops martii</i>	BR	Pimental, Itaituba, PA	-4.57694	-56.26083	MPEG 24940	[no agent data]	na
<i>Hydrops martii</i>	BR	Barreirinha, Rio Tapajós, próximo à São Luis do Tapajós, Pará	-4.416667	-56.216667	MZUSP 5136	Henrique Braz	This study



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<i>Hydrops martii</i>	BR	Rio Madeira, Borba, Amazonas	-4.388	-59.594	MNRJ 2985	Henrique Braz	This study
<i>Hydrops martii</i>	BR	Rio Itacoai, 30 km do Rio Javari, Benjamim Constant, Amazonas	-4.383	-70.031	MNRJ 3013	Henrique Braz	This study
<i>Hydrops martii</i>	BR	Itaituba, Pará	-4.276	-55.984	LPHA 1313	Henrique Braz	This study
<i>Hydrops martii</i>	CO	Leticia, Amazonas	-4.205428	-69.932808	MCTPUCRS 14100	Henrique Braz	This study
<i>Hydrops martii</i>	BR	Rio Itapicuru, Maranhão	-4.181095	-44.036576	ZSMH 1844/0		Hoogmoed & Gruber, 1983; Albuquerque, 2000; Franzen & Glaw, 2007
<i>Hydrops martii</i>	BR	Reserva de Desenvolvimento Sustentável Piagaçu-Purus (Rio Purus), Amazonas	-4.05000	-61.66660			Waldez et al. (2013)
<i>Hydrops martii</i>	BR	Nova Olinda do Norte, Amazonas	-3.888	-59.094	IBSP 25456	Henrique Braz	This study
<i>Hydrops martii</i>	PE	Moropón, Loreto	-3.88673	-73.73534			
<i>Hydrops martii</i>	PE	Centro Unión, Rio Aucayo, Loreto	-3.85944	-73.13667			Lynch 1976
<i>Hydrops martii</i>	PE	Centro Union, Maynas, Loreto	-3.839579	-73.122808	TCWC 44649		Albuquerque, 2000
<i>Hydrops martii</i>	PE	Lupuna Isla, Loreto, PE	-3.80000	-73.13330	AMNH 56086	Nelson R. de Albuquerque	Albuquerque 2000
<i>Hydrops martii</i>	PE	Iquitos (Río Itaya), Loreto	-3.78330	-73.25000			Roze (1957)
<i>Hydrops martii</i>	PE	Moropón, Iquitos, Maynas, Loreto	-3.766667	-73.416667	TCWC 45572		Albuquerque, 2000
<i>Hydrops martii</i>	PE	Rio Itaya, Iquitos, Maynas, Loreto	-3.7658333	-73.2316667	AMNH 55299		Roze 1957b; Albuquerque 2000
<i>Hydrops martii</i>	PE	Iquitos, Loreto, PE	-3.75000	-73.25000	TCWC 45571	Nelson R. de Albuquerque	Albuquerque 2000
<i>Hydrops martii</i>	PE	Iquitos, Maynas, Loreto	-3.75	-73.25	AMNH 53408		Roze, 1957b
<i>Hydrops martii</i>	PE	Nanay, Loreto, PE	-3.74068	-73.24299	AMNH 52031	Nelson R. de Albuquerque	Albuquerque 2000
<i>Hydrops martii</i>	PE	Nanay, Loreto	-3.66660	-73.23330			Roze (1957)
<i>Hydrops martii</i>	PE	Mazán, Maynas, Loreto	-3.496494	-73.089961			Monge & Cabanillas, 2009
<i>Hydrops martii</i>	BR	São Paulo de Olivença (São João, Rio Solimões), Amazonas	-3.46660	-68.93330			Roze (1957)
<i>Hydrops martii</i>	BR	São João, Rio Solimões, São Paulo de Olivença, Amazonas	-3.39836	-68.91610	AMNH 25194		Roze, 1957b
<i>Hydrops martii</i>	BR	Tefê, Amazonas	-3.38330	-64.70000			Roze (1957)
<i>Hydrops martii</i>	BR	Boca de Tefê, confluência dos rios Tefê e Solimões, Tefê, Amazonas	-3.37644	-64.561592	MP 461		Roze, 1957b

<i>Hydrops martii</i>	PE	Pévas, Ampiyacu River, E. Peru	-3.32257	-71.86264	CAS-SU 8724	Nelson R. de Albuquerque	Albuquerque 2000
<i>Hydrops martii</i>	PE	Pebas, Mariscal Ramón Castilla, Loreto	-3.322222	-71.816667	CASSU 8724		Albuquerque, 2000
<i>Hydrops martii</i>	BR	Rio Xingú, 6h de barco de Altamira, Pará	-3.203	-52.206	IBSP 56498		Albuquerque, 2000
<i>Hydrops martii</i>	BR	Manaus, Amazonas	-3.13330	-60.01660			Roze (1957)
<i>Hydrops martii</i>	BR	Rio Madeira, Manaus, Amazonas	-3.102	-60.025	INPA 12031	Henrique Braz	This study
<i>Hydrops martii</i>	BR	Lago Tapaiúna, margem esquerda do rio Preto da Eva, Manaus, AM, Brasil	-3.10194	-60.02500	IBSP 32832	Nelson R. de Albuquerque	Albuquerque 2000
<i>Hydrops martii</i>	BR	Manaus, AM	-3.10000	-60.01667	AMNH 36161	Nelson R. de Albuquerque	Albuquerque 2000
<i>Hydrops martii</i>	BR	(Boca de Tefé) , Amazonas	-3.01660	-64.80000			Roze (1957)
<i>Hydrops martii</i>	BR	UHE CuruáUna, Santarém, Pará	-2.812492	-54.298675	MCTPUCRS 7916		Albuquerque & Camargo, 2004; Frota et al., 2005
<i>Hydrops martii</i>	EC	Mashumarentsa, divisa com Peru, 600 m de altitude, MoronaSantiago	-2.75	-77.216667	FHGO 1266		CisnerosHeredia, 2005
<i>Hydrops martii</i>	BR	Estação Ecológica Anavilhanas, Arquipélago Anavilhanas, Amazonas	-2.75	-60.75			Silveira & Magnusson, 1999
<i>Hydrops martii</i>	BR	Novo Airão, Amazonas	-2.621	-60.944	MM J26	Henrique Braz	This study
<i>Hydrops martii</i>	BR	Lago Amanã, Rio Japurá, Maraã, AM	-2.59674	-64.66291	MPEG 16775	[no agent data]	na
<i>Hydrops martii</i>	BR	Santa Luzia do Paruá, BR-316, MA	-2.59278	-45.74667	MPEG 13662	[no agent data]	na
<i>Hydrops martii</i>	BR	Ipixuna do Pará, PA	-2.55778	-47.49389	MPEG 21344	[no agent data]	na
<i>Hydrops martii</i>	BR	Santarém, Pará	-2.45000	-54.70000			Albuquerque (2000)
<i>Hydrops martii</i>	BR	Fazenda Santa Mônica, Santarém, Pará	-2.443	-54.708	LPHA 1301	Henrique Braz	This study
<i>Hydrops martii</i>	BR	U.H.E. Curuá-Una, Santarém, PA	-2.44278	-54.70778	MCP 7916	Nelson R. de Albuquerque	Albuquerque 2000
<i>Hydrops martii</i>	BR	ToméAçu, Pará	-2.419	-48.152	MHNCI 8306	Henrique Braz	This study
<i>Hydrops martii</i>	BR	Ipitinga, Estrada Mojú-Acará, Tomé-Açu, PA	-2.41889	-48.15194	MPEG 12610	[no agent data]	na
<i>Hydrops martii</i>	BR	Curumucuri, Juruti, PA	-2.15194	-56.09194	MPEG 22545	[no agent data]	na
<i>Hydrops martii</i>	BR	Km 11 da Estrada do Acará, PA	-2.02548	-47.72209	MPEG 15500	Nelson R. de Albuquerque	Albuquerque 2000
<i>Hydrops martii</i>	BR	km 16 da estrada do Acará, PA	-2.02361	-47.68750	MPEG 15500	[no agent data]	na
<i>Hydrops martii</i>	BR	Monte Alegre, Pará	-2.008	-54.069	LPHA 2840	Henrique Braz	This study
<i>Hydrops martii</i>	BR	ECFPn/MPEG/ Floresta Nacional de Caxiuaã, Itaperu, Melgaço, PA	-1.90667	-51.38222	MPEG 21871	[no agent data]	na

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<i>Hydrops martii</i>	BR	Rio Ubá. Povoação do Luso. Km 36 da estrada Mojú-Acará, Moju, Pará	-1.8839	-48.7689	MPEG 13297	Henrique Braz	This study
<i>Hydrops martii</i>	BR	Prainha, Pará	-1.8	-53.48	LPHA 2550	Henrique Braz	This study
<i>Hydrops martii</i>	BR	Santa Luzia, Capitão Poço, PA	-1.74500	-47.06500	MPEG 4173	Nelson R. de Albuquerque	Albuquerque 2000
<i>Hydrops martii</i>	BR	Santa Luzia, Capitão Poço, Pará	-1.745	-47.065	MPEG 6042	Henrique Braz	This study
<i>Hydrops martii</i>	BR	São Pedro, Capitão Poço, Pará	-1.6189670	-47.1678830	MPEG 10471	Henrique Braz	This study
<i>Hydrops martii</i>	BR	Limão Grande, Ourém, PA	-1.51528	-47.00211	MPEG 4241	[no agent data]	na
<i>Hydrops martii</i>	BR	Belém, PA	-1.43730	-48.47060	MPEG 18893	[no agent data]	na
<i>Hydrops martii</i>	PE	Santa Maria, Rio Santa Maria, Loreto	-1.398125	-74.644075	TCWC 38227		Dixon & Soini, 1977
<i>Hydrops martii</i>	BR	Macapazinho, Castanhal, Pará	-1.389119	-47.984161	MPEG 11800		Albuquerque 2000
<i>Hydrops martii</i>	PE	Santa Maria, Rio Santa Maria, Loreto	-1.38333	-74.65000		Nelson R. de Albuquerque	
<i>Hydrops martii</i>	BR	Pratinha, Estrada de Genipaúba, Benevides, PA	-1.36083	-48.24500	MPEG 8618	Nelson R. de Albuquerque	Albuquerque 2000
<i>Hydrops martii</i>	BR	Boa Vista, Castanhal, Pará	-1.360117	-47.985536	MPEG 2701	Henrique Braz	This study
<i>Hydrops martii</i>	CO	Puerto Charapa, La Pedrera, Amazonas	-1.338264	-69.558428			PérezSantos & Moreno, 1988
<i>Hydrops martii</i>	BR	Curupaiti, Viseu, Pará	-1.298289	-46.322239	MPEG 12327		Albuquerque 2000
<i>Hydrops martii</i>	BR	Castanhal, PA	-1.29694	-47.92194	MPEG 11800	Nelson R. de Albuquerque	Albuquerque 2000
<i>Hydrops martii</i>	BR	Bom Jesus, Bragança, PA	-1.26472	-46.68944	MPEG 2228	[no agent data]	na
<i>Hydrops martii</i>	BR	Viseu, PA	-1.19694	-46.14000	MPEG 12327	Nelson R. de Albuquerque	Albuquerque 2000
<i>Hydrops martii</i>	BR	Lago Jacaré, Rio Trombetas Reserva Biológica do Rio Trombetas, Pará	-1.188611	-56.67083	MZUSP 3827	Henrique Braz	This study
<i>Hydrops martii</i>	BR	Solimões, Tefé, AM, Brasil	-1.10444	-47.51194	IBSP 15086	Nelson R. de Albuquerque	Albuquerque 2000
<i>Hydrops martii</i>	BR	Bela Vista, Viseu, Pará	-1.0700	-46.7900	MPEG 13192	Henrique Braz	This study
<i>Hydrops martii</i>	BR	Ilha de Marajó, Pará	-0.966667	-49.566667			Hoge & Nina, 1969
<i>Hydrops martii</i>	BR	Ilha de Marajó, Pará	-0.85000	-49.40000			Roze (1957)
<i>Hydrops martii</i>	EC	Auca Vía Cononaco, km 135, Orellana	-0.708403	-76.887861	DHMECN 139		CisnerosHeredia, 2005
<i>Hydrops martii</i>	EC	Estación de Biodiversidad Tiputini, 215 m de altitude, Orellana	-0.616667	-76.166667	DFCHUSFQ 0H15		CisnerosHeredia, 2005
<i>Hydrops martii</i>	BR	Santa Isabel do Rio Negro, Amazonas	-0.414	-65.019	INPA 12624	Henrique Braz	This study
<i>Hydrops martii</i>	BR	Rio Preto, Afuá, Ilha do Marajó, PA	-0.15694	-50.38694	MPEG 25324	[no agent data]	na



<i>Hydrops martii</i>	EC	Cuyabeno, Sucumbíos	-0.1167	-75.8333	DHMECN 138		CisnerosHeredia, 2005
<i>Hydrops martii</i>	BR	Macapá, Amapá	0.03330	-51.06660			Entiauspe-Neto et al. (2017)
<i>Hydrops martii</i>	CO	Rio Cairary, próximo à Cachoeira Jurupary, próximo fronteira entre BRACOL, Vaupés	1.073611	-69.845	AMNH 4459		Roze 1957b; Albuquerque 2000
<i>Hydrops martii</i>	BR	Rio Branco, Igarapé do BotaPanela, perto da Cachoeira de Bem Querer, Cararaú, margem do rio, Caracará, Roraima	1.919069	-61.001122	MPEG 16696		Albuquerque, 2000
<i>Hydrops martii</i>	CO	(Rio Cairary, near Jurupary Waterfall) , Guainía	1.93330	-68.25000			Roze (1957)
<i>Hydrops martii</i>	VE	conjunção do Canal del Casiquiare e Rio Siapa, Amazonas	2.119158	-66.462072	FA 184-185		Rivas et al., 2012
<i>Hydrops martii</i>	BR	Boa Vista, Roraima	2.820	-60.673	MZUSP 10121	Henrique Braz	This study
<i>Hydrops martii</i>	GU	BurroBurro, 83 m, PotaroSiparuni	4.731	-58.850667			Donnelly et al., 2005
<i>Hydrops martii</i>	BR	km 23 da estrada de Maracanã, PA	-3.35417	-64.71140	MPEG 2110	[no agent data]	na
<i>Hydrops triangularis</i>	BO	Comunidad Oromomo, Moxos, Beni	-15.833	-66.367	CBF 1010		Albuquerque & Lema, 2008
<i>Hydrops triangularis</i>	BO	confluência dos rios Ichoa e Aguas Claras, Moxos, Beni	-15.733	-65.25	CBF 1005		Albuquerque & Lema, 2008
<i>Hydrops triangularis</i>	BO	Ibiato, Provincia de Cercado, Departamento de Cochabamba	-14.82998	-64.44855	CBF 1038	Nelson R. de Albuquerque	Albuquerque & Lema, 2008
<i>Hydrops triangularis</i>	BO	El Refúgio, Provincia de San Ignacio de Velasco, Departamento de Santa Cruz	-14.76700	-61.03300	MNKR 2588	Nelson R. de Albuquerque	Albuquerque & Lema, 2008
<i>Hydrops triangularis</i>	BO	Estación Biológica Beni, Provincia de Yacuma, Departamento del Beni	-14.38000	-66.18	CBF 393	Nelson R. de Albuquerque	Albuquerque & Lema, 2008
<i>Hydrops triangularis</i>	BO	Cachuela Chapacura, margem do Rio Blanco, Iténez, Beni	-14.283	-63.5	IBSP 41351		Albuquerque & Lema, 2008
<i>Hydrops triangularis</i>	BO	Lago Rogoagua (=Roguaguado), Departamento del Beni	-13.03500	-65.942222	AMNH 22449	Nelson R. de Albuquerque	Albuquerque & Lema, 2008
<i>Hydrops triangularis</i>	PE	Pampas del Heath National Sanctuary, Madre de Dios	-12.94507	-68.91795	MUSA - 4749	Roy Santa Cruz	This study
<i>Hydrops triangularis</i>	PE	Pampas del Heath National Sanctuary, Madre de Dios	-12.94507	-68.91795	MUSA - 4750	Roy Santa Cruz	This study
<i>Hydrops triangularis</i>	BO	Lago Rogoaguado, Yacuma, Beni	-12.867	-65.717	AMNH 22449		Roze, 1957b; Albuquerque & Lema, 2008; Scrocchi et al., 2005
<i>Hydrops triangularis</i>	BO	Curichi, Trinidad	-12.61667	-63.51667	MNKR 3698	Nelson R. de Albuquerque	Albuquerque & Lema, 2008

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<i>Hydrops triangularis</i>	PE	Estacion Biologica Los Amigos	-12.56861	-70.09917	na	Emanuele Biggi & Francesco Tomasinelli	This study
<i>Hydrops triangularis</i>	PE	Estacion Biologica Los Amigos	-12.55970	-70.11030	MUSM-H	Rudolf von May & Daniel Rabosky	This study
<i>Hydrops triangularis</i>	BR	Rio Guaporé, Costa Marques, Rondônia	-12.445	-64.227	MCT-PUCRS 6300		Albuquerque & Lema, 2008
<i>Hydrops triangularis</i>	BR	Praia Alta, Costa Marques, RO	-12.44500	-64.227222	MCP 6300	Nelson R. de Albuquerque	Albuquerque & Lema, 2008
<i>Hydrops triangularis</i>	BO	Rio Itenez, Beni	-11.891	-65.011	AMNH 101863		Albuquerque & Lema, 2008
<i>Hydrops triangularis</i>	BO	Cachoeira de Tchapa Cura	-11.43365	-69.13108	IBSP 41351	Thais Guedes & Fausto Barbo	Thais Guedes, personal communication
<i>Hydrops triangularis</i>	BO	Río Mamoré, Guayaramerin, Departamento del Beni	-10.82667	-65.356667	AMNH 101862	Nelson R. de Albuquerque	Albuquerque & Lema, 2008
<i>Hydrops triangularis</i>	BO	Guayaramerin, Río Mamoré, Antonio Vaca Díez, Beni	-10.8	-65.383	UMMZ 56896		Roze, 1957b; Albuquerque & Lema, 2008; Scrocchi et al., 2005
<i>Hydrops triangularis</i>	BR	Guajará-Mirim, Rondônia	-10.783	-65.339			Bernarde et al., 2012
<i>Hydrops triangularis</i>	BR	U.H.E. Lajeado, Porto Nacional, TO, Brasil	-10.70778	-48.416944	IBSP 66641	Nelson R. de Albuquerque	Albuquerque & Lema, 2008
<i>Hydrops triangularis</i>	BR	UHE Luís Eduardo Magalhães, Palmas, Tocantins	-10.167	-48.333	IBSP 65686	Henrique Braz	This study
<i>Hydrops triangularis</i>	BR	Rio Branco, Acre	-9.975	-67.81	UFAC 162	Henrique Braz	This study
<i>Hydrops triangularis</i>	BR	UHE Luís Eduardo Magalhães, Lajeado, Tocantins	-9.751	-48.358	IBSP 65822	Henrique Braz	This study
<i>Hydrops triangularis</i>	BR	UHE Luís E Magalhães, Lajeado, TO	-9.75083	-48.35778	IBSP 65362	Nelson R. de Albuquerque	Albuquerque & Lema, 2008
<i>Hydrops triangularis</i>	PE	Rio Pacaya, Rio Ucayali, Loreto	-9.627	-74.133	BMNH 1913.7.2815		Roze, 1957b; Albuquerque & Lema, 2008
<i>Hydrops triangularis</i>	BR	UHE Jirau, Rondônia	-9.331	-64.734			NATURAE, 2010a, b
<i>Hydrops triangularis</i>	BR	UHE de Jirau, Jaci-Paraná, Porto Velho, RO	-9.26444	-64.64194	MPEG 23968	[no agent data]	na
<i>Hydrops triangularis</i>	BR	Santa Bárbara, Rondônia	-9.167	-63.067	MZUSP 8780	Henrique Braz	This study
<i>Hydrops triangularis</i>	BR	UHE Santo Antônio, Porto Velho, Rondônia	-8.806	-63.937			Marçal et al., 2011
<i>Hydrops triangularis</i>	BR	Conceição do Araguaia, PA	-8.25778	-49.26500	IBSP 24038	Nelson R. de Albuquerque	Albuquerque & Lema, 2008
<i>Hydrops triangularis</i>	BR	Uruçuiuna, Ribeiro Gonçalves, Piauí	-7.558	-45.242	MHNCI 2566		Yuki, 1997
<i>Hydrops triangularis</i>	BR	Humaitá, Amazonas	-7.506	-63.021	MNRJ 19353	Henrique Braz	This study
<i>Hydrops triangularis</i>	BR	Teles Pires River, Mato Grosso	-7.35000	-58.05000	IBSP 30868	Nelson R. de Albuquerque	Herp Review 2001

<i>Hydrops triangularis</i>	PE	Rean Rean, Suhaya, Ucayali, Loreto	-7.334	-75.204	AMNH 53579		Albuquerque & Camargo, 2004
<i>Hydrops triangularis</i>	BR	Rio Purus, Lábrea, AM	-7.27000	-64.78000	RMNH 27784	Nelson R. de Albuquerque	Albuquerque & Lema, 2008
<i>Hydrops triangularis</i>	BR	ca. 170 m, Carolina, Maranhão	-7.196	-47.422			Pavan, 2007
<i>Hydrops triangularis</i>	BR	Rio Madeira - Col. Harold Sioli, Três Casas, Amazonas	-6.995	-62.681	IBSP 15034	Henrique Braz	This study
<i>Hydrops triangularis</i>	BR	Projeto Cristalino, Posto de coleta, Alojamento, Curionópolis, Pará	-6.091	-49.541	MPEG 20746	Henrique Braz	This study
<i>Hydrops triangularis</i>	BR	Projeto Cristalino, Lagoa do Platô, Curionópolis, PA	-6.09083	-49.54083	MPEG 20742	[no agent data]	na
<i>Hydrops triangularis</i>	BR	Rio Araguaia, Porto Jarbas Passarinho, Rodovia Transamazônica, Palestina do Pará, PA	-5.70667	-48.17944	MPEG 12752	Nelson R. de Albuquerque	Albuquerque & Lema, 2008
<i>Hydrops triangularis</i>	BR	Barra do Corda, Maranhão	-5.533	-45.267	MZUSP 3139		Hoge & Nina, 1969
<i>Hydrops triangularis</i>	BR	Fazenda São Gabriel, Marabá, PA	-5.36889	-49.11778	MPEG 24104	[no agent data]	na
<i>Hydrops triangularis</i>	BR	km 11 da PA-222	-5.29440	-49.07533	MPEG 9483	Nelson R. de Albuquerque	Albuquerque & Lema, 2008
<i>Hydrops triangularis</i>	BR	Fazenda Santa Maria - km 602 - BR 316 - rodovia São Luiz à Terezinha, Timon, MA	-5.09417	-42.83670	IBSP 44149	Nelson R. de Albuquerque	Albuquerque & Lema, 2008
<i>Hydrops triangularis</i>	PE	Monte Carmelo, Departamento de Loreto	-5.07000	-73.91000	AMNH 55934	Nelson R. de Albuquerque	Albuquerque & Lema, 2008
<i>Hydrops triangularis</i>	BR	Base Operacional Geólogo Pedro de Moura, Província Petrolífera de Urucu, Coari, Amazonas	-4.885	-65.35	MPEG 22226	Henrique Braz	This study
<i>Hydrops triangularis</i>	BR	Pimental, Itaituba, PA	-4.57694	-56.26083	MPEG 24942	[no agent data]	na
<i>Hydrops triangularis</i>	BR	Itinga, Km 337 Belém-Brasília, Itinga do Maranhão, Maranhão	-4.45	-47.526	MPEG 1121	Henrique Braz	This study
<i>Hydrops triangularis</i>	BR	Sítio Bela Vista, PA-222, Dom Eliseu, PA	-4.43806	-47.53917	MPEG 15532	Nelson R. de Albuquerque	Albuquerque & Lema, 2008
<i>Hydrops triangularis</i>	BR	Sítio Bela Vista, PA-222, Dom Eliseu, Pará	-4.285	-47.505	MPEG 12135	Henrique Braz	This study
<i>Hydrops triangularis</i>	BR	Itaituba, Pará	-4.276	-55.984	LPHA 1345	Henrique Braz	This study
<i>Hydrops triangularis</i>	CO	Leticia, Amazonas	-4.205	-69.933	MCT-PUCRS 14099	Henrique Braz	This study
<i>Hydrops triangularis</i>	BR	Boa Vista ???, Maranhão	-4.017	-43.283	MZUSP 1298		Hoge & Nina, 1969
<i>Hydrops triangularis</i>	BR	Igarapé Manjuru, Amazonas	-4	-57	AMNH 114261		Albuquerque & Lema, 2008
<i>Hydrops triangularis</i>	PE	Moropón, Loreto	-3.88673	-73.73534		Nelson R. de Albuquerque	
<i>Hydrops triangularis</i>	PE	Mishana (=Minchana), Departamento de Loreto	-3.88080	-73.49170	TCWC 39095	Nelson R. de Albuquerque	Albuquerque & Lema, 2008
<i>Hydrops triangularis</i>	BR	Codajás, AM	-3.83694	-62.05694	BMNH 1965.1325	Nelson R. de Albuquerque	Albuquerque & Lema, 2008



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<i>Hydrops triangularis</i>	PE	Mishana, Rio Nanay, Maynas, Loreto	-3.8	-73.533	TCWC 39096		Albuquerque & Lema, 2008
<i>Hydrops triangularis</i>	BR	Cachoeira do Espelho, Rio Xingu, Altamira, Pará	-3.8	-52.533	MZUSP 9054	Henrique Braz	This study
<i>Hydrops triangularis</i>	PE	Monte Carmelo, Maynas, Loreto	-3.796	-73.046	AMNH 52354		Scrocchi et al., 2005; Albuquerque & Lema, 2008
<i>Hydrops triangularis</i>	PE	Iquitos, Maynas, Loreto	-3.75	-73.25	AMNH 52017		Roze, 1957b; Albuquerque & Lema, 2008
<i>Hydrops triangularis</i>	PE	Iquitos, Peru	-3.74810	-73.24720	MCZ R-56054	Harvey Bassler	GBIF
<i>Hydrops triangularis</i>	SU	Compagnie Creek, Brokopondo District	-3.73333	-73.25000	RMNH 13609	Nelson R. de Albuquerque	Albuquerque & Lema, 2008
<i>Hydrops triangularis</i>	BR	Alto Alegre do Pindaré, MA	-3.70089	-44.91761	MPEG 25454	[no agent data]	na
<i>Hydrops triangularis</i>	BR	Santa Luzia do Paruá, BR-316, MA	-3.60778	-45.34278	MPEG 11187	[no agent data]	na
<i>Hydrops triangularis</i>	BR	NE de Santa Inês, SW de Vitória do Mearim, Povoado de Tirirical, São Luís, MA	-3.55556	-44.92028	MPEG 21278	[no agent data]	na
<i>Hydrops triangularis</i>	BR	Gancho do Arari, BR-222 entre Miranda e Arari, Arari, Maranhão	-3.517	-44.767	MPEG 13484	Henrique Braz	This study
<i>Hydrops triangularis</i>	BR	Arari, MA	-3.46667	-44.78330	MNRJ 4497	Hussam Zaher & Ulisses Caramaschi	Herp Review 1996
<i>Hydrops triangularis</i>	BR	Gancho do Arari, BR-222 entre Miranda e Arari, MA	-3.45389	-44.78000	MPEG 14619	Nelson R. de Albuquerque	Albuquerque & Lema, 2008
<i>Hydrops triangularis</i>	BR	Ega, lago Tefê, confluência com rio Solimões, Tefê, Amazonas	-3.376	-64.562	ZSMH 1846/0		Roze, 1957b; Hoogmoed & Gruber, 1983
<i>Hydrops triangularis</i>	BR	Tefê, Amazonas	-3.354	-64.711	MZUSP 8375	Henrique Braz	This study
<i>Hydrops triangularis</i>	BR	Pedras, margem do Rio Preto da Eva, Manaus, Amazonas	-3.349	-58.3	IBSP 32831	Henrique Braz	This study
<i>Hydrops triangularis</i>	BR	Fazenda Santo Amaro, Urbano Santos, MA	-3.20778	-43.40389	MPEG 20558	[no agent data]	na
<i>Hydrops triangularis</i>	BR	Manaus, AM	-3.10000	-60.01667	MZUSP 7679	Nelson R. de Albuquerque	Albuquerque & Lema, 2008
<i>Hydrops triangularis</i>	BR	São José, Jacaré, Rio Solimões, Amazonas	-2.933	-66.133	MZUSP 5478		Albuquerque & Lema, 2008
<i>Hydrops triangularis</i>	BR	Estação Ecológica Anavilhanas, Arquipélago Anavilhanas, Amazonas	-2.75	-60.75			Silveira & Magnusson, 1999
<i>Hydrops triangularis</i>	BR	Reserva do Alto do Rio Guamá, Aldeia Canindé, Rio Gurupi, Pará	-2.616	-46.511	MZUSP 4220		Albuquerque & Lema, 2008
<i>Hydrops triangularis</i>	BR	Pindaré-Mirim, Puraqueú, BR-222, MA	-2.59278	-45.74667	MPEG 14703	[no agent data]	na
<i>Hydrops triangularis</i>	BR	Vila Nova, Rio Xingu, Col. Bach, Senador José Porfírio, Pará	-2.591	-51.954	IBSP 14939	Henrique Braz	This study

<i>Hydrops triangularis</i>	BR	Povoado de Ponta do Mangue, Barreirinhas, Maranhão	-2.579	-42.745			Souza, 2007
<i>Hydrops triangularis</i>	BR	barragem entre Fazenda São José de Canaã e Fazenda São Luiz, durante a limpeza da represa, Peri Mirim, Maranhão	-2.578	-44.854	IBSP 21768	Henrique Braz	This study
<i>Hydrops triangularis</i>	BR	Canindé, Rio Gurupí	-2.57000	-46.52000	MZUSP 4420	Nelson R. de Albuquerque	Albuquerque & Lema, 2008
<i>Hydrops triangularis</i>	BR	Maicá, Santarém, Pará	-2.55	-54.4	MCT-PUCRS 10608		Frota et al., 2005
<i>Hydrops triangularis</i>	BR	Taparinha [Taperinha], Brazil	-2.53333	-54.28333	MCZ R-177374	[no agent data]	GBIF
<i>Hydrops triangularis</i>	BR	Taparinha [Taperinha], Brazil	-2.53333	-54.28333	R-177373	[no agent data]	GBIF
<i>Hydrops triangularis</i>	BR	Taparinha [Taperinha], Brazil	-2.53333	-54.28333	MCZ R-177371	[no agent data]	GBIF
<i>Hydrops triangularis</i>	BR	Taparinha [Taperinha], Brazil	-2.53333	-54.28333	R-177372	[no agent data]	GBIF
<i>Hydrops triangularis</i>	BR	Taperinha, AM	-2.53333	-54.28333	MCZ 177371	Nelson R. de Albuquerque	Albuquerque & Lema, 2008
<i>Hydrops triangularis</i>	BR	São Luiz, MA	-2.53000	-44.30278	IBSP 55162	Nelson R. de Albuquerque	Albuquerque & Lema, 2008
<i>Hydrops triangularis</i>	BR	Santarém, Pará	-2.443	-54.708	LPHA 2433		Frota et al., 2005
<i>Hydrops triangularis</i>	BR	Bairro da Esperança, área da COSAMPA, Santarém, Pará	-2.433	-54.7	LPHA 1205	Henrique Braz	This study
<i>Hydrops triangularis</i>	BR	Tomé-Açu, Pará	-2.419	-48.152	IBSP 14829	Henrique Braz	This study
<i>Hydrops triangularis</i>	BR	Reserva INPA-WWF, Manaus, Amazonas	-2.417	-59.717	MZUSP 8432		Albuquerque & Lema, 2008
<i>Hydrops triangularis</i>	BR	Juruti, PA	-2.15194	-56.09194	MPEG 22682	[no agent data]	na
<i>Hydrops triangularis</i>	EC	Montalvo, Pastaza	-2.067	-76.967	DHMECN 252		Cisneros-Heredia, 2005
<i>Hydrops triangularis</i>	BR	Estrada do Acará, km 16, São Domingos do Capim, Pará	-2.058	-48.715	MPEG 15507		Albuquerque & Lema, 2008
<i>Hydrops triangularis</i>	BR	Igarapé Pirajuara, Estrada do Acará, Pará	-2.001	-47.893	MPEG 9417	Henrique Braz	This study
<i>Hydrops triangularis</i>	BR	Óbidos, Pará	-1.918	-55.518	IBSP 14938	Henrique Braz	This study
<i>Hydrops triangularis</i>	BR	Óbidos, PA	-1.91778	-55.51778	MCZ 3671	Nelson R. de Albuquerque	Albuquerque & Lema, 2008
<i>Hydrops triangularis</i>	BR	UHE Balbina, Presidente Figueiredo, Amazonas	-1.916	-59.473	IBSP 51496	Henrique Braz	This study
<i>Hydrops triangularis</i>	BR	Obydos	-1.90833	-55.51889	R-3671	Louis Agassiz	GBIF
<i>Hydrops triangularis</i>	BR	ECFPn/MPEG/ Floresta Nacional de Caxiuaã, Itaperu, Melgaço, PA	-1.90667	-51.38222	MPEG 19431	[no agent data]	na
<i>Hydrops triangularis</i>	BR	Nova Vida, 25 km distante do rio Gurupí, Junco do Maranhão, BR-316, MA	-1.81389	-46.10750	MPEG 10341	Nelson R. de Albuquerque	Albuquerque & Lema, 2008

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<i>Hydrops triangularis</i>	BR	Colônia Nova, próxima do Rio Gurupi, PA	-1.80889	-46.40389	MPEG 10299	Nelson R. de Albuquerque	Albuquerque & Lema, 2008
<i>Hydrops triangularis</i>	BR	ECFPn/MPEG/ Floresta Nacional de Caxiuanã, Melgaço, Pará	-1.792	-51.434	MPEG 21870	Henrique Braz	This study
<i>Hydrops triangularis</i>	BR	Rio Gurupi, Nova Vida, 25 km distante do rio, BR-316, Pará	-1.774	-46.529	MPEG 12254	Henrique Braz	This study
<i>Hydrops triangularis</i>	BR	São Pedro, Capitão Poço, PA	-1.74500	-47.06500	MPEG 1627	Nelson R. de Albuquerque	Albuquerque & Lema, 2008
<i>Hydrops triangularis</i>	BR	Capitão Poço, Pará	-1.745	-47.065	MPEG 776	Henrique Braz	This study
<i>Hydrops triangularis</i>	BR	Santa Luzia, Capitão Poço, Pará	-1.745	-47.065			Cunha & Nascimento, 1978
<i>Hydrops triangularis</i>	BR	Rio Gurupi, Colônia Nova, próximo do rio, BR-316, Viseu, Pará	-1.727	-46.318	MPEG 10300	Henrique Braz	This study
<i>Hydrops triangularis</i>	BR	km 220 da BR-316, antigo km 74 de Capanema, Viseu, Pará	-1.721	-46.622	MPEG 2989	Henrique Braz	This study
<i>Hydrops triangularis</i>	BR	São Domingos do Capim, Pará	-1.675	-47.775	IBSP 22727	Henrique Braz	This study
<i>Hydrops triangularis</i>	BR	Km 220, BR-316, PA	-1.67365	-46.73091	MPEG 9568	Nelson R. de Albuquerque	Albuquerque & Lema, 2008
<i>Hydrops triangularis</i>	BR	Puraquequara, Ourém, Pará	-1.548	-47.119	MPEG 4999		Albuquerque & Lema, 2008
<i>Hydrops triangularis</i>	BR	Limão Grande, Ourém, PA	-1.51528	-47.00211	MPEG 1272	[no agent data]	na
<i>Hydrops triangularis</i>	BR	Instituto Agronômico do Norte, Belém, Pará	-1.454	-48.446	IBSP 14677	Henrique Braz	This study
<i>Hydrops triangularis</i>	BR	Ananindeua Maquari, Belem	-1.45000	-48.48333	KU 140168		GBIF
<i>Hydrops triangularis</i>	BR	3 km E Belem, IPEAN	-1.45000	-48.45637	KU 128101		GBIF
<i>Hydrops triangularis</i>	BR	Belém, PA	-1.43730	-48.47060	MPEG 18678	Nelson R. de Albuquerque	Albuquerque & Lema, 2008
<i>Hydrops triangularis</i>	BR	Gurupá, PA	-1.40500	-51.64000	MPEG 15158	Nelson R. de Albuquerque	Albuquerque & Lema, 2008
<i>Hydrops triangularis</i>	BR	Macapazinho, Castanhal, Pará	-1.389	-47.984	MPEG 8648		Albuquerque & Lema, 2008
<i>Hydrops triangularis</i>	BR	BR-316, km 6, Transportadora Elo Ltda., Ananindeua, Pará	-1.38	-48.393	MPEG 16704		Albuquerque & Lema, 2008
<i>Hydrops triangularis</i>	BR	Ananindeua, PA	-1.36583	-48.37194	MPEG 474	Nelson R. de Albuquerque	Albuquerque & Lema, 2008
<i>Hydrops triangularis</i>	BR	Boa Vista, Castanhal, Pará	-1.36	-47.986	MPEG 2706	Henrique Braz	This study
<i>Hydrops triangularis</i>	CO	La Pedrera, Amazonas	-1.328	-69.579	ILS 132		Amaral, 1935
<i>Hydrops triangularis</i>	BR	Curupati, Viseu, Pará	-1.298	-46.322	MPEG 11505		Albuquerque & Lema, 2008
<i>Hydrops triangularis</i>	BR	Boa Vista, Apeú, Castanhal, PA	-1.29694	-47.92194	MPEG 2703	Nelson R. de Albuquerque	Albuquerque & Lema, 2008
<i>Hydrops triangularis</i>	BR	Ilha de Outeiro, Belém, PA	-1.25100	-48.45610	MPEG 13070	Nelson R. de Albuquerque	Albuquerque & Lema, 2008



<i>Hydrops triangularis</i>	BR	Bela Vista, Viseu, Pará	-1.197	-46.14	MPEG 15924	Henrique Braz	This study
<i>Hydrops triangularis</i>	BR	Bela Vista, Viseu, PA	-1.19694	-46.14000	MPEG 15925	Nelson R. de Albuquerque	Albuquerque & Lema, 2008
<i>Hydrops triangularis</i>	BR	Igarapé Rio das Gatas, Capanema, PA	-1.19583	-47.18083	MPEG 18552	Nelson R. de Albuquerque	Albuquerque & Lema, 2008
<i>Hydrops triangularis</i>	BR	Peixe-Boi, Pará	-1.192	-47.314	MPEG 683		Albuquerque & Lema, 2008
<i>Hydrops triangularis</i>	BR	Fazenda Real, Viseu, Pará	-1.192	-46.218	MPEG 5284		Albuquerque & Camargo, 2004
<i>Hydrops triangularis</i>	BR	Peixe-Boi, PA	-1.19194	-47.31389	MPEG 1403	Nelson R. de Albuquerque	Albuquerque & Lema, 2008
<i>Hydrops triangularis</i>	BR	Cacoal, Augusto Corrêa, Pará	-1.167	-46.8	MPEG 6650	Henrique Braz	This study
<i>Hydrops triangularis</i>	BR	Ilha do Mosqueiro, Baía de Guajará, próximo de Belém, Pará	-1.162	-48.471			Cunha & Nascimento, 1978
<i>Hydrops triangularis</i>	BR	Santo Antônio do Tauá, Pará	-1.152	-48.129	MPEG 5699		Albuquerque & Lema, 2008
<i>Hydrops triangularis</i>	BR	Santo Antônio do Tauá, PA	-1.15194	-48.12889	MPEG 4719	Nelson R. de Albuquerque	Albuquerque & Lema, 2008
<i>Hydrops triangularis</i>	BR	Igarapé-Açu, Pará	-1.127	-47.618	MPEG 908	Henrique Braz	This study
<i>Hydrops triangularis</i>	BR	Igarapé-Açu, PA	-1.12694	-47.61778	MPEG 906	Nelson R. de Albuquerque	Albuquerque & Lema, 2008
<i>Hydrops triangularis</i>	BR	Baía do Sol, ilha de Mosqueiro, Belém, PA	-1.10000	-48.40000	MPEG 22831	[no agent data]	na
<i>Hydrops triangularis</i>	BR	Bom Jesus, Bragança, PA	-1.06278	-46.77278	MPEG 5118	Nelson R. de Albuquerque	Albuquerque & Lema, 2008
<i>Hydrops triangularis</i>	BR	Cacoal, Augusto Correa, PA	-1.02194	-46.64500	MPEG 5366	Nelson R. de Albuquerque	Albuquerque & Lema, 2008
<i>Hydrops triangularis</i>	BR	UHE Luis E Magalhães, Palmas, TO	-1.01844	-48.333611	IBSP 65594	Nelson R. de Albuquerque	Albuquerque & Lema, 2008
<i>Hydrops triangularis</i>	EC	Parque Nacional Yasuní, km 28 Estrada Pompeya Sur-Iru, ca. 300 m de altitude, Orellana	-1	-76	FHGO 2468		Cisneros-Heredia, 2005
<i>Hydrops triangularis</i>	BR	Santa Rosa, Estrada da Vigia, Vigia	-0.95556	-48.08611	MPEG 4613	Nelson R. de Albuquerque	Albuquerque & Lema, 2008
<i>Hydrops triangularis</i>	BR	Colares, PA	-0.93694	-48.28194	MPEG 18937	[no agent data]	na
<i>Hydrops triangularis</i>	BR	Trombetinha, Santarém Novo, PA	-0.92889	-47.396944	MPEG 3243	Nelson R. de Albuquerque	Albuquerque & Lema, 2008
<i>Hydrops triangularis</i>	BR	Serra do Navio, AP	-0.89583	-52.001944	IBSP 27395	Nelson R. de Albuquerque	Albuquerque & Lema, 2008
<i>Hydrops triangularis</i>	EC	Auca Vía Cononaco, km 135, Orellana	-0.708	-76.888	DHMECN 82		Cisneros-Heredia, 2005
<i>Hydrops triangularis</i>	BR	Igarapé Parijô, Salinópolis, PA	-0.62889	-47.35583	MPEG 19711	[no agent data]	na
<i>Hydrops triangularis</i>	EC	Limoncocha, Provincia de Sucumbios	-0.41000	-76.62	KU 183515	Nelson R. de Albuquerque	Albuquerque & Lema, 2008
<i>Hydrops triangularis</i>	BR	Ilha de Santana, AP	-0.03500	-51.175	IBSP 14826	Nelson R. de Albuquerque	Albuquerque & Lema, 2008
<i>Hydrops triangularis</i>	CO	Rio Vaupés, Mitú, Vaupés	1.183	-70.167	ANPS 25733		Roze, 1957b; Albuquerque & Lema, 2008

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<i>Hydrops triangularis</i>	CO	Río Vaupés, Mitú, Departamento de Vaupés	1.26000	-70.23	ANPS 25733	Nelson R. de Albuquerque	Albuquerque & Lema, 2008
<i>Hydrops triangularis</i>	BR	Parque Nacional Montanhas do Tumucumaque, próximo à trílice fronteira com o Suriname e Guiana Francesa, Amapá	2.193	-54.588			Lima, 2008
<i>Hydrops triangularis</i>	SR	OELEMARIE	3.10000	-54.51667	84673	GROEN, JANE A	GBIF
<i>Hydrops triangularis</i>	SU	Oelemari, Sipaliwini ou Marowijne?	3.105	-54.541	CM 84673		Albuquerque & Lema, 2008
<i>Hydrops triangularis</i>	BR	Rio Branco, em frente a Ilha de Maracá, Igarapé do Cojúbim, Roraima	3.417	-61.667	MPEG 16697	Henrique Braz	This study
<i>Hydrops triangularis</i>	BR	Anapú, UHE de Belo Monte, PA	3.47194	-51.19778	MPEG 22363	[no agent data]	na
<i>Hydrops triangularis</i>	GU	Maripasoula, Guyane	3.64443	-54.03377	MNHN 1989.3052	Nelson R. de Albuquerque	Albuquerque & Lema, 2008
<i>Hydrops triangularis</i>	BR	BR-156, Km 90, Aldeia Tukai, Oiapoque, AP	3.83300	-51.83330	MPEG 21725	[no agent data]	na
<i>Hydrops triangularis</i>	CO	Finca Las Mercedes, 14 Km South of Villavicencio, Departamento del Meta	4.02730	-69.20444	UTA 32076	Nelson R. de Albuquerque	Albuquerque & Lema, 2008
<i>Hydrops triangularis</i>	CO	Villavicencio, Departamento del Meta	4.14000	-73.63	MZUSP 5994	Nelson R. de Albuquerque	Albuquerque & Lema, 2008
<i>Hydrops triangularis</i>	GU	Kabocali, 101 m, Potaro-Siparuni	4.285	-58.748			Donnelly et al., 2005
<i>Hydrops triangularis</i>	CO	Rio Manacacías, Hacienda La Esperanza, Meta	4.383	-72.067	MZUSP 6103		Albuquerque & Lema, 2008
<i>Hydrops triangularis</i>	GF	Matoury, Cayenne	4.85	-52.333	MNHN 1978.25		Gasc & Rodrigues, 1980; Albuquerque & Lema, 2008
<i>Hydrops triangularis</i>	GU	Matoury, Guyane Française	4.85000	-52.33000	MNHN 1978.2500	Nelson R. de Albuquerque	Albuquerque & Lema, 2008
<i>Hydrops triangularis</i>	GU	Camp de Saint Eugène, Guyane	4.85056	-53.05583	MNHN 1996.4586	Nelson R. de Albuquerque	Albuquerque & Lema, 2008
<i>Hydrops triangularis</i>	GU	La Madeleine, Guyane Française	4.92000	-52.32000	MNHN 1988.167	Nelson R. de Albuquerque	Albuquerque & Lema, 2008
<i>Hydrops triangularis</i>	VE	floresta, 2 km ao Leste, San Ignacio de Yuruaní, Bolívar	5	-61.133	MHNLS 10953		Gorzula & Señaris, 1998
<i>Hydrops triangularis</i>	PE	Iquitos, Departamento de Loreto	5.11670	-54.98330	AMNH 52017	Nelson R. de Albuquerque	Albuquerque & Lema, 2008
<i>Hydrops triangularis</i>	CO	vereda Ulere, finca Altamira, San Luis de Palenque, Casanare	5.186047222	-70.98163889	ICN 235		Angarita-Sierra, 2014
<i>Hydrops triangularis</i>	GU	Río Essequibo, Maripa, Potaro-Siparuni	5.271	-58.928	AMNH R-18162		Roze, 1957b; Scrocchi et al., 2005
<i>Hydrops triangularis</i>	SU	Rio Suriname, próximo a Kadjoé, Para	5.343	-54.995	RMNH 13610		Albuquerque & Lema, 2008
<i>Hydrops triangularis</i>	CO	Corregimiento de Santa Rita	5.36300	-67.86000	IAvH-CT-16167	Juan M Renjifo	GBIF
<i>Hydrops triangularis</i>	CO	Cgto. Santa Rita.	5.36333	-67.86000	IAvH-R-5133	Renjifo, Juan	GBIF

<i>Hydrops triangularis</i>	CO	Corregimiento Santa Rita	5.36333	-67.86000	IAvH-R-5133	Renjifio, Juan-Manuel	GBIF
<i>Hydrops triangularis</i>	GF	Sinnamary, Cayenne	5.372	-52.952	IBSP 13760	Henrique Braz	This study
<i>Hydrops triangularis</i>	GU	Berbice, Upper Demerara-Berbice	5.45	-57.95	BMNH 53.4.6.12		Roze, 1957b
<i>Hydrops triangularis</i>	SU	Bush Camp , Zanderij, Para	5.45	-55.2			Abuys, 1984
<i>Hydrops triangularis</i>	SU	Onverwacht, Para District	5.59000	-55.19000	RMNH 27371	Nelson R. de Albuquerque	Albuquerque & Lema, 2008
<i>Hydrops triangularis</i>	GU	Kamakusa, Guyana	5.95000	-59.9	AMNH 25035	Nelson R. de Albuquerque	Albuquerque & Lema, 2008
<i>Hydrops triangularis</i>	GU	Mazaruni-Potaro, Kartabo, Cuyuni-Mazaruni	6.35	-58.683	AMNH R-14141		Scrocchi et al., 2005; Albuquerque & Lema, 2008; Cole et al., 2013
<i>Hydrops triangularis</i>	GU	Kartabo, Mazaruni-Potaro District	6.35000	-58.68333	AMNH 14134	Nelson R. de Albuquerque	Albuquerque & Lema, 2008
<i>Hydrops triangularis</i>	GU	Rio Dunoan-Dumerara	6.43333	-58.30000	UMMZ 47737	Nelson R. de Albuquerque	Albuquerque & Lema, 2008
<i>Hydrops triangularis</i>	GU	Kurupung, Upper Mazaruni District	6.46667	-59.166667	UMMZ 83642	Nelson R. de Albuquerque	Albuquerque & Lema, 2008
<i>Hydrops triangularis</i>	GU	Kurupung, Upper Mazaruni district, Cuyuni-Mazaruni	6.467	-59.167	UMMZ 83642		Roze, 1957b; Albuquerque & Lema, 2008
<i>Hydrops triangularis</i>	GU	Lama Creek, Rio Demerara, Demerara-Mahaica	6.55	-57.95	AMNH 36100		Roze, 1957b; Albuquerque & Lema, 2008
<i>Hydrops triangularis</i>	VE	El Dorado, Bolívar	6.715	-61.638	MBUCV 1998		Roze, 1957b
<i>Hydrops triangularis</i>	GU	Rio Essequibo, Bonasica Creek	6.75000	-58.500	AMNH 18163	Nelson R. de Albuquerque	Albuquerque & Lema, 2008
<i>Hydrops triangularis</i>	GU	Georgetown, Demerara-Mahaica	6.8	-58.167	AMNH 36141		Roze, 1957b; Albuquerque & Camargo, 2004
<i>Hydrops triangularis</i>	VE	Caño León, 3 km de El Jordán, Amazonas Táchira	7.4555556	-71.9166667	FA		Roze, 1957b
<i>Hydrops triangularis</i>	VE	Caño Guaritico, Mantecal, Estado Apure	7.80000	-69.03333	MHNLS 8008	Nelson R. de Albuquerque	Albuquerque & Lema, 2008
<i>Hydrops triangularis</i>	VE	San Fernando de Apure, Apure	7.893	-67.472	MHNLS 755		Roze, 1957b
<i>Hydrops triangularis</i>	VE	Bolívar, Estado Bolívar	8.11667	-63.55000	USNM 56235	Nelson R. de Albuquerque	Albuquerque & Lema, 2008
<i>Hydrops triangularis</i>	VE	Ciudad Bolívar, Bolívar	8.15	-63.55	USNM 56235		Roze 1957b; Albuquerque & Lema, 2008
<i>Hydrops triangularis</i>	VE	Curiapo, Estado Delta Amacuro	8.56667	-68.59167	MHNLS 12973	Nelson R. de Albuquerque	Albuquerque & Lema, 2008
<i>Hydrops triangularis</i>	VE	Sacupana del Cerro, Delta Amacuro	8.573	-61.652	MCNC 5859		Molina et al., 2004
<i>Hydrops triangularis</i>	VE	Curiapo, Delta Amacuro	8.576	-61	MHNLS 12973-4		Albuquerque & Lema, 2008
<i>Hydrops triangularis</i>	VE	Hato Piñero, Estado Cojedes	8.93263	-68.08149	EBRG 3665	Nelson R. de Albuquerque	Albuquerque & Lema, 2008

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<i>Hydrops triangularis</i>	VE	Estacion Pisciola, Municipio Papelon	8.95944	-69.47278	MCNG 1602	Allen Markezich	Herp Review 2001
<i>Hydrops triangularis</i>	VE	Guanare, on road to Barinas, Guanare, Portuguesa	9.044	-69.75	MCNG 1006		Markezich, 2001
<i>Hydrops triangularis</i>	VE	caño Jarisiduina, isla Barril, Delta Amacuro	9.167	-60.85	MHNLS 10940		Gorzula & Señaris, 1998; Molina et al., 2004
<i>Hydrops triangularis</i>	VE	Estado Portuguesa	9.55389	-61.11667	MHNLS 7622	Nelson R. de Albuquerque	Albuquerque & Lema, 2008
<i>Hydrops triangularis</i>	VE	SW San Carlos City, Rincón Moreno	9.57167	-68.62056	MBUCV 7117	G.R. Rivas Fuenmayor & O. Fuentes	Herp Review 2000
<i>Hydrops triangularis</i>	VE	San Carlos, Estado Cojedes	9.65722	-68.59167	MHNLS 6444	Nelson R. de Albuquerque	Albuquerque & Lema, 2008
<i>Hydrops triangularis</i>	VE	Caño Manamo, Isla del Tigre, Estado Delta Amacuro	9.91667	-61.11667	EBRG 2617	Nelson R. de Albuquerque	Albuquerque & Lema, 2008
<i>Hydrops triangularis</i>	TR	Princes Town	10.268	-61.378			Mole, 1924
<i>Hydrops triangularis</i>	VE	Parare, Sucre	10.314982	-63.279087	Naturhistoriska Museet, Göteborg 4754		Thais Guedes; OBS. PESS.
<i>Hydrops triangularis</i>	TR	Nariva Swamp	10.417	-61.083			Ford & Ford, 2002
<i>Hydrops triangularis</i>	TR	North Manzanilla Beach	10.473	-61.049			Boos, 2001
<i>Hydrops triangularis</i>	TR	Four Roads	10.487	-61.216			Mole, 1924
<i>Hydrops triangularis</i>	TR	Talparo, TR	10.50000	-61.266667	ANSP 23178	Nelson R. de Albuquerque	Albuquerque & Lema, 2008
<i>Hydrops triangularis</i>	TR	Talparo	10.51	-61.265	ANSP 23178		Roze 1957b; Albuquerque & Lema, 2008
<i>Hydrops triangularis</i>	TR	Caroni Swamp	10.511	-61.374			Mole, 1924
<i>Hydrops triangularis</i>	TR	Cunupia	10.55	-61.367			Mole, 1924
<i>Hydrops triangularis</i>	TR	Arima	10.631	-61.275			Mole, 1924
<i>Hydrops triangularis</i>	TR	Orange Grove Estate, Tacarigua	10.637	-61.368	RMNH 10177		Brongersma, 1956
<i>Hydrops triangularis</i>	TR	Tucker Valley	10.714	-61.609	AMNH 64463a, b		Albuquerque & Lema, 2008
<i>Hydrops triangularis</i>	BR	km 23 da estrada de Maracanã, PA	-3.35417	-64.71140	MPEG 1887	[no agent data]	na